

Serial No.: 09/929,094

IN THE DRAWINGS:

Please substitute the attached two replacement sheets showing formal Figs. 1 and 2 as replacements for the originally filed Figs. 1 and 2.

REMARKS

Upon entry of the present Amendment the Claims under consideration remain 1-27. No Claims have been amended hereby. Formal replacement drawings are filed herewith. Reconsideration and withdrawal of all outstanding rejections is respectfully requested. The Detailed Action of 14 December 2005 will now be addressed with reference to the headings and any paragraph numbers therein.

Drawings

The drawings are objected to under 37 CFR 1.83(a) because the drawings are informal and “the drawings must show every feature of the claims.”

Applicants have attached replacement sheets of formal drawings hereto.

Regarding the Examiner’s objections to the lack of every claim detail being shown in the drawings:

With respect to the “pre-clustering” step of Claim 22(a), the person having ordinary skill in the art would reference the application as set forth at pages 11, line 15 through page 12, where it is noted that the function can be accomplished by known means (page 11, lines 18-19). Further an exemplary pseudocode algorithm is provided at page 12 along with further discussion to inform the person having ordinary skill in the art concerning said preclustering as a subset of a clustering function. Still further, the preclustering step is identified with reference to the drawings as encompassed in cluster building module 41 and cluster building index 45, represented in Fig. 2.

Likewise, with respect to the “tracking” step of Claim 22(d), such a step can also be easily understood by one of skill in the art (without further illustration) through a reading of the text and knowledge in the art, and likewise may be encompassed in cluster building module 41 and cluster building index 45, represented in Fig. 2, and as set forth at page 12, lines 16-19 of the spec.

Therefore, Applicants respectfully urge that 1) the Examiner is incorrect in the assertion that the step is not shown in the drawings, and 2) assuming *arguendo* that the claimed step is not explicitly shown; there is no legal requirement for such explicit showing in the drawings under 35 USC §113 or 37 CFR §1.81(a) because it is not necessary for the understanding of the subject matter sought to be patented (when read by a person having ordinary skill in the art because such person of skill would necessarily understand the claim in view of the above cited parts of the specification as a whole).

Claim Rejections -35 USC §103

Applicants would first like to reiterate an overall view of the invention by reference to the Abstract of the Invention at page 35 of the specification.

The present invention relates to a system for detecting misuse of authorized access to a digital data gathering system by a user. User behavior is monitored as to the search queries, the search results, or both. When a valid record of normal user behavior is obtained, each new query and result for the user can be compared to the record to determine if anomalous activity has occurred.

It is respectfully urged that none of the cited references teach or suggest these techniques of the present invention. Thus, rather than taking the §103 rejections of paragraphs II-XII in order, in certain instances the discussion below may be grouped where the same references are used in the rejections.

Per paragraph II, page 3, of the Detailed Action, Claims 1, 2 7 and 14 stand rejected as obvious over Lermuzeaux *et al.* (U.S. Patent 5,621,889, hereinafter Lermuzeaux) in view of Oblinger, US Pub. No. 2002/0107852. It is the contention of the Detailed Action that Lermuzeaux substantially teaches or suggests the presently claimed invention except for clustering data (Claim 1) and structured data profiles (Claim 7), which is shown by Oblinger. Applicants traverse.

Lermuzeaux is cited to demonstrate that security systems exist, which is true

per se, but not what is being claimed within the invention as a whole. The reference demonstrates that user behavior monitoring to support anomaly detection is known, which is true *per se*, but not what is being claimed. Lermuzeaux's general approach is designed to detect non-authorized uses and is a "rule based" system for detecting behavior differences with respect to system operation. It is relevant to the present invention only to demonstrate that the present invention is not the first user difference security system, which again is true *per se* but not what is being claimed.

A primary difference between Lermuzeaux. and the present invention is that they are two different types of security systems. That is, the present invention is information or data retrieval-based system to detect information content differences in a user's information retrieval patterns and content misuse, rather than based upon user action differences as in Lermuzeaux. In short, Lermuzeaux provides no suggestion for a security system based on information retrieval patterns.

Oblinger is cited to demonstrate that data clustering has existed, which is true *per se*, but not what is being claimed within the invention as a whole. There is no mention of security uses throughout the entire Oblinger application.

No mention comes from either reference to supply motivation for practicing the limitations of monitoring families of the digital data gathering results of the user; comparing the families of the digital data gathering results of the user to the user cluster index to determine anomalies in the digital data gathering results; and identifying a potential misuse as set forth in the substance of independent Claims 1 and 14.

Thus, no motivation comes from the art itself to combine Oblinger and Lermuzeaux. to achieve the present invention. Therefore, no *prima facie* case of obviousness can be made from these references with respect to the claimed inventions. It is respectfully requested that the present rejections be reconsidered and withdrawn.

It is also noted that the reference to Lermuzeaux, col. 7, lines 9-25, in the Detailed Action does not appear to be congruent with the teachings it is said to illustrate. Clarification is requested in a second non-final action should this rejection be maintained.

Per paragraph III, page 6, of the Detailed Action, Claims 3-6 and 9 stand rejected as obvious over Lermuzeaux and Oblinger, and further in view of Lane et al., *Temporal Sequence Learning and Data Reduction for Anomaly Detection* (hereinafter “Lane”).

Lane is cited to demonstrate that user profiles based on terms (in this case systems commands and especially Unix shell examples) existed. Again, this is true *per se*, but not what is being claimed within the invention as a whole. As noted at page 5, line 1 of the specification, the present invention is concerned with the application level. At this level the commands are minimal in variance, e.g., “search term1 term2” does not differ “search term3 term4”; as opposed to Unix commands, upon which Lane is based, where variance is much greater. The Examiner contends that Lane refers to “phrases” & “queries.” However, the Applicant’s review of the reference did not find these terms used in the publication, especially as used within the context of the present invention. The lack of use of these terms is to be expected as the Lane reference’s teaching is basically for operating systems intrusion detection. Lane is merely one example of many systems-oriented detection systems.

The present invention is not an intrusion detection system *per se*, it is geared for detecting authorized misuse. Per the above discussion with respect to Lermuzeaux and Oblinger, it is urged that Lane does not add any suggestion with respect to motivation for practicing the limitations of monitoring families of the digital data gathering results of the user; comparing the families of the digital data gathering results of the user to the user cluster index to determine anomalies in the digital data gathering results; and identifying a potential misuse as set forth in the substance of independent Claim 1.

Thus, no motivation comes from the art itself to achieve the present invention. Therefore, no *prima facie* case of obviousness can be made from these references with respect to the claimed inventions. It is respectfully requested that the present rejections be reconsidered and withdrawn.

Per paragraph VII, page 12, of the Detailed Action, Claims 15-21 stand rejected as obvious over Lermuzeaux, Oblinger and Lane. Applicants traverse.

As discussed above, none of the cited references teach or suggest the use of information retrieval, including a user lexicon, user cluster index and structured data profile of user characteristics to detect misuse per the limitations of independent Claim 15, the ratio of anomalies per Claim 16, etc., based on monitoring of information retrieval patterns.

Thus, no motivation comes from the cited art itself to achieve the present invention. Therefore, no *prima facie* case of obviousness can be made from these references with respect to the claimed inventions. It is respectfully requested that the present rejections be reconsidered and withdrawn.

Per paragraph IV, page 8, of the Detailed Action, Claim 8 stands rejected as obvious over Lermuzeaux and Oblinger, and further in view of Parker et al., US Patent No. 5,909,589 (hereinafter “Parker”).

Parker is cited to demonstrate that it is possible to identify a user by verification against a structured data profile, which while again true *per se*, is not what is being claimed within the invention as a whole. Parker teaches detecting user habits, such as typing errors, mouse click patterns, etc, namely user interaction; rather than information systems content returned to the user as in the present invention.

Furthermore, the present invention monitors a lexicon, namely a vocabulary, of returned results from search queries from documents retrieved; and not user identity detection questions as taught in Parker. Parker is relevant largely to intrusion detection rather than misuse as in the present invention which assumes the users are valid users. While the level of relevance of Parker is marginal in that it is about security, Parker does not teach or suggest the monitoring of a structured data profile or other limitations as identified above with respect to Lermuzeaux *and* Oblinger, within the context of the present invention.

Thus, no motivation comes from the cited art itself to achieve the present invention. Therefore, no *prima facie* case of obviousness can be made from these references with respect to the claimed inventions. It is respectfully requested that the present rejections be reconsidered and withdrawn.

Per paragraph V, page 9, of the Detailed Action, Claims 10-12 stands rejected as obvious over Parker in view of Lane. Applicants traverse.

Per the above discussions, neither of Parker or Lane teach or suggest the limitations for practicing the limitations of monitoring the digital data gathering results of the user; constructing and maintaining a user lexicon and the use of same to detect a potential misuse.

Thus, no motivation comes from the cited art itself to achieve the present invention. Therefore, no *prima facie* case of obviousness can be made from these references with respect to the claimed inventions. It is respectfully requested that the present rejections be reconsidered and withdrawn.

Per paragraph VI, page 11, of the Detailed Action, Claim 13 stands rejected as obvious Parker and Lane in view of Lermuzeaux. Applicants traverse.

Parker probes the user for identifying information that only the user would know; as in Parker (col. 11 lines 40-42: where “the student is probed with questions to identify his or her identity), which the present invention does not do. Rather the statistics the present invention maintains in a structured repository are details about the user, (such as hours of employment, vacation schedule, security clearance, etc.,) used by the application to verify content correctness. Per the above discussions, none of Parker, Lane or Lermuzeaux teach or suggest the limitations for practicing the monitoring the digital data gathering results of the user; constructing and maintaining a list of data identifying workplace characteristics of the user and the use of same to detect a potential misuse.

Thus, no motivation comes from the cited art itself to achieve the present invention. Therefore, no *prima facie* case of obviousness can be made from these references with respect to the claimed inventions. It is respectfully requested that the present rejections be reconsidered and withdrawn.

Serial No.: 09/929,094

Per paragraph VIII, page 16, of the Detailed Action, Claim 22 stands rejected as obvious over Herz et al., U.S. Patent 5,835, 087 (hereinafter “Herz”) in view of Lane.

Per paragraph X, page 18, of the Detailed Action, Claims 24-25 stand rejected as obvious over Lane view of Herz. Applicants traverse.

Herz is drawn to what is commonly referred to today as document routing. While Herz may be used to show that clustering is used in information retrieval, which again is true *per se*, Herz has nothing to do with security measures and provides no motivation to combine its techniques with a security system to achieve the present invention as a whole.. Nor does Lane supply the missing teachings or motivation for such a combination.

Thus, no motivation comes from the cited art itself to achieve the present invention. Therefore, no *prima facie* case of obviousness can be made from these references with respect to the claimed inventions. It is respectfully requested that the present rejections be reconsidered and withdrawn.

Per paragraph XI, page 19 of the Detailed Action, Claim 26 stands rejected as obvious over Oblinger in view of Lane.

Per paragraph XII, page 20 of the Detailed Action, Claim 27 stands rejected as obvious over Oblinger and Herz in view of Lane. Applicants traverse.

Per the above discussion, none of Oblinger, Herz and Lane teach a system of monitoring an information retrieval system, in the present claims a document collection, for the purposes of maintaining a lexicon and predicting misuse, according to the present invention as a whole.

Thus, no motivation comes from the cited art itself to achieve the present invention. Therefore, no *prima facie* case of obviousness can be made from these references with respect to the claimed inventions. It is respectfully requested that the present rejections be reconsidered and withdrawn.

Serial No.: 09/929,094

Per paragraph IX, page 17 of the Detailed Action, Claim 23 stands rejected as obvious over Lane in view of Zhang et al., US Patent 5,832,182 (hereinafter "Zhang"). Applicants traverse.

Zhang is drawn to data clustering and is cited to show that one can keep a count on the number of items in a cluster and to make sure to assign the data to the right cluster. While again, this may be true *per se*, the Zhang patent has nothing to do with, and provides no suggestion for, a security system based on information retrieval; and therefore provides no motivation to combine with Lane to suggest the elements of the present invention when viewed as a whole.

Thus, no motivation comes from the cited art itself to achieve the present invention. Therefore, no *prima facie* case of obviousness can be made from these two references with respect to the claimed inventions. It is respectfully requested that the present rejections be reconsidered and withdrawn.

Conclusion

The cited references do not provide a suggestion of combinability, or a likelihood of success, for a combination which teaches or suggests the presently claimed invention(s). When the present claims are viewed as a whole and not as a template to pick and chose those sections of the cited art which meet the functionality of individual limitations, it is respectfully urged that the teachings of the present references do not create a *prima facie* case of obviousness and the present rejections must be withdrawn.

For all the foregoing reasons, the Claims under consideration are believed to be allowable over the art of record. A notice to that effect is earnestly solicited.

Examiner Interview Summary

Applicants' undersigned Attorney and Examiner Khooshnoodi conducted a telephonic interview of this case on 23 February 2006. Each of the cited references was generally discussed with respect to the present claims. The drawing objections were also

Serial No.: 09/929,094

discussed. No agreement was reached as to the allowance of any claims. The Examiner indicated that the drawings, upon further consideration, were likely to be acceptable. Applicants' attorney wishes to thank the Examiner for the courtesy shown him during their interview.

Request for Telephonic Interview

The Examiner is further requested to call Applicants' attorneys should the Examiner feel that any issues remain after entry and consideration of the present paper.

Favorable consideration is requested.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Roland W. Norris". The signature is fluid and cursive, with the first and last names being more prominent.

Roland W. Norris

Registration No. 32,799

Pauley Petersen & Erickson
2800 West Higgins Road; Suite 365
Hoffman Estates, Illinois 60195
TEL (847) 490-1400
FAX (847) 490-1403